

CLAIMS

What is claimed is:

1. A system, comprising:
a plurality of electronic devices adapted to send and receive data, wherein each electronic device uses any one of a plurality of communication protocols; and
a switch comprising a plurality of ports, each port is adapted to couple to an electronic device, wherein each port is configurable for use according to the protocol used by the electronic device coupled thereto.
2. The system of claim 1 wherein the plurality of communication protocols comprise PCI-X and PCI Express.
3. The system of claim 1 wherein a port is configured for use with an electronic device upon initialization of the electronic device coupled thereto.
4. The system of claim 1 wherein the protocol used by one of the plurality of ports is configurable by a user of the electronic device coupled to the port.
5. The system of claim 1 wherein each port is configured automatically according to the protocol of the electronic device coupled thereto.
6. The system of claim 1 wherein the plurality of electronic devices comprise at least two devices selected from the group consisting of computers, computer components, and computer peripherals.
7. The system of claim 1 wherein each port comprises a connector having separate data lines to send and receive data according to each of the plurality communication protocols.

8. A switch adapted to couple to a plurality of devices that each implement any one of a plurality of communication protocols, the switch comprising:

a plurality of ports, wherein each port is adaptable to couple to one of the devices and to receive data from and transmit data to said device and programmable to implement the communication protocol implemented by said device; and

a crossbar coupled to the ports, wherein the crossbar is operable to direct data flow between the ports according to destination information provided with data received by the switch.

9. The switch of claim 8 wherein each port comprises a plurality of protocol converters that convert data from the communication protocols of the devices to a protocol used by the crossbar and vice versa.

10. The switch of claim 9 wherein each port comprises logic coupled to the protocol converters and the crossbar, wherein the logic selects a protocol converter and an associated data path to use according to configuration data.

11. The switch of claim 10 wherein a protocol converter is automatically selected for use according to the configuration data.

12. The switch of claim 10 wherein the configuration data is provided according to a user controlled interface.

13. The switch of claim 10 wherein the logic comprises a bi-directional multiplexer.

14. The switch of claim 10 wherein the logic comprises a configuration register.

15. The switch of claim 9 wherein each port comprises a serializer/deserializer coupled to at least one of the protocol converters, the serializer/deserializer converts data from a serial data path to a parallel data path and vice versa.
16. A method, comprising:
receiving data according to any one of a plurality of predetermined protocols;
converting the data from the protocol of the received data to a crossbar protocol;
converting the data from the crossbar protocol to a selected one of the plurality of predetermined protocols; and
outputting the data according to the selected protocol.
17. The method of claim 16, wherein the protocol of said received data is determined by the protocol used by a device supplying the data, and the selected protocol is determined by the protocol used by a destination device for the output data.
18. The method of claim 16 wherein receiving data according to any one of a plurality of predetermined protocols comprises serializing or deserializing the data.
19. The method of claim 16 wherein receiving data according to any one of a plurality of predetermined protocols comprises selecting one of a plurality of data paths, wherein each data path is associated with one of the predetermined protocols.
20. The method of claim 19 wherein said selecting is automated.
21. The method claim 19 wherein said selecting is user controlled.

22. A system, comprising:
- a plurality of electronic devices adapted to send and receive data, each device using any one of a plurality of communication protocols;
 - a switch comprising a plurality of ports, each port adapted to couple to one of the plurality of electronic devices, the switch comprises also a crossbar coupled to the ports, wherein each port comprises:
 - means for receiving data according to any of the plurality of communication protocols;
 - means for converting the communication protocol of the received data to a crossbar protocol; and
 - means for converting data from the crossbar protocol to any of the plurality of communication protocols.
23. The system of claim 22 wherein the switch further comprises means for queuing data.
24. The system of claim 22 wherein each port that couples to an electronic device is configured to use a communication protocol of the electronic device automatically.
25. The system of claim 22 wherein each port that couples to an electronic device is configured to use a communication protocol of the electronic device according to a user controlled interface.
26. The system of claim 22 wherein data received by the switch is associated with a first protocol that is incompatible with a second protocol used to output data from the switch.